Stock Returns and Equity Premium Evidence Using Dividend Price Ratios and Dividend Yields in Malaysia

By

David E. Allen[1] and Imbarine Bujang[1]

[1]School of Accounting, Finance and Economics, Edith Cowan University

School of Accounting, Finance and Economics & FEMARC Working Paper Series
Edith Cowan University
September 2009
Working Paper 0908

Correspondence author:

David E. Allen
School of Accounting, Finance and Economics
Faculty of Business and Law
Edith Cowan University
Joondalup, WA 6027
Australia
Phone: +618 6304 5471
Fax: +618 6304 5271
Email: d.allen@ecu.edu.au

ABSTRACT

The empirical findings of Goyal and Welch (2003) and Cochrane (2006) suggested that dividend yields and dividend ratios are robust predictors of annual stock returns and annual equity premia. However, Goyal and Welch (2003) asserted that many researchers considered dividend yields to be a good predictor for the equity premium before the 1990s but not after the 1990s. We apply these models to the Malaysian market. Our general findings suggest that the in-sample performances of the KLCI Malaysian datasets present similar results to those predicted by Goyal and Welch (2003, 2006). Meanwhile, the Mincer-Zarnowitz (1969) regression forecast tests for out of sample performances illustrate poor predictability of stock returns and equity premiums using both dividend price ratios and dividend yields. Cochrane (2006) suggested that if stock returns and dividend growth are not predictable, then price growth must be forecastable to bring the dividend yields back to equilibrium after any shock given that the dividend yields are stationary. We find that the growth of dividends is predictable using data deflated by changes in the consumer price index. Thus, the overall results suggest that both dividend price ratio and dividend yield models have significant effects though the dividend yield model is a superior predictor of stock returns and equity premiums in the Malaysian context.

Keywords: Dividend yields; Dividend price ratios; Stock returns; Equity premium; Asian financial crisis 1997

1. Introduction

The issue of whether stock returns can be explained using dividend price ratios and dividend yields is a central one which sits at the core of rational pricing models. Whether the equity premium is predictable or not has attracted much attention from economists. This study investigates the predictive power of dividend ratios and dividend yields in the Malaysian market when used for forecasting stock returns and equity premiums. In general, dividend ratios and dividend yields have been found to be statistically significant predictors, especially for annual equity premiums (Ball, 1978, Rozeff, 1984, Fama and French, 1988, 1989, Cochrane, 2006, and Goyal and Welch 2003, 2006). Goyal and Welch (2003, 2006) defined dividend ratios as the total dividend paid by all stocks (D_t), divided by the total stock capitalization either at the beginning of the year P_{t-1} (the dividend yield) or at the end of the year P_t (the dividend ratio). The equity premium can be illustrated as the return on the stock market minus the risk free rate. The empirical regressions for stock returns and equity premium specifications can be expressed as:

$$R_{mt} = \gamma_0 + \gamma_1 \cdot \frac{D_t}{P_{t-1}} + \varepsilon_t \qquad (1)$$

$$[\, R_{mt} - R_{ft} \,] = \gamma_0 + \gamma_1 \cdot \frac{D_t}{P_{t-1}} + \varepsilon_t \qquad (2)$$

$$R_{mt} = \gamma_0 + \gamma_1 \cdot \frac{D_t}{P_t} + \varepsilon_t \qquad (3)$$

$$[\, R_{mt} - R_{ft} \,] = \gamma_0 + \gamma_1 \cdot \frac{D_t}{P_t} + \varepsilon_t \qquad (4)$$

where

R_{mt} = Market Return Based on Index at time t.

R_{ft} = Risk free rate (3-Month Treasury Bills) at time t.

D_t= Dividend per share at time t based on aggregation of stocks in the index

D_{t-1}= Last year's dividend per share at time t-1 based on the aggregate

P_t = Index of the market (closing price at time t)

P_{t-1} = Index of the market (closing price at time t-1)

The ideas embodied by equations (1) and (3) were conceived by Fama and French (1988) who estimated stock market returns (R_{mt}) using dividend yields and dividend ratios as the predictor variables. Then, they estimated the equity premiums by deducting from the returns on the stock market the risk free rate (R_{ft}) and then regressed dividend yields and dividend ratios as shown in equation (2) and (4) respectively as reported in Goyal and Welch (2003, 2006). Campbell and Viceira (2002) also assert that equation (1) and (3) are the most widely used by financial academics and analysts in developed markets. Currently, more than 200 published articles in the finance research literature quote Fama and French (1988).

This paper continues the initial research of Goyal and Welch (2003, 2006) by examining whether dividend price ratios and dividend yields can be used to explain stock market returns and excess returns for the Main Board of the Malaysian stock market using time series forecasting techniques.

2. Problem Statement

Analysis of stock returns and the equity premium, using time series analysis is well documented for the US and other developed markets. Goyal and Welch (2003) analysed previous papers and suggested that ability to forecast the equity premium was not apparent even before the 1990s. Nevertheless, further research by Goyal and Welch (2006) did in fact confirm that these predictors were appropriate for the period 1926 to 1990 (i.e., the in-sample period) but not after 1990 (i.e. the out-of sample period). Therefore, they concluded that

> "*most variables would not have helped an investor out predict the historical equity premium mean. Most would have outright hurt. None deserves an unqualified endorsement.*

Campbell and Shiller (1988) argued that while the dividend ratio should on theoretical grounds, have predictive value, in practice it had poor predictive ability. They assumed that changes in dividend processes could lead to non-stationary dividend ratio coefficients in determining the equity premium. They used a strategy of forecasting coefficients with their own time varying autoregression coefficient estimates to control for any non-stationary. However, despite strong theoretical justification, the instrument did not fulfil the role, and increased doubts about the use of dividend ratios as stock market equity premium predictors.

In another study conducted by Cochrane (2006) evidence was provided that stock returns are unpredictable and difficult to forecast. Cochrane argues that the dividend growth rate has negligible predictable variations and that dividend yields are quite volatile in nature, yet the dividend yield must forecast stock market returns, especially at long horizons. In this study Cochrane's results depend on the assumption about dividend growth being unpredictable. The overall results produce inconsistent findings in which he failed to find any significant predictive results in out of sample stock returns.

There is evidence of the usefulness of dividend yields and dividend price ratios for the prediction of equity premiums, as Goyal and Welch (2003) discussed, and the dividend price ratio was a good predictor before the 1990s, with the ratio being successful in explaining dividend growth. More recently, many researchers such as Boudoukh, Richardson and Whitelaw (2006), Campbell (2001), Cochrane (2006) and Valkanov (2003) have found that dividend ratios are capable of predicting stock returns.

3. Data and Methodology

The data comprises aggregate monthly closing stock prices (P_t) (to calculate stock returns), dividends per share (DPS), Dividend Price Ratios (DPR) and dividend yields (DY) on the main board of Bursa Malaysia. The data is gathered from Datastream for the period from 1990 until 2007. The Malaysian 3-month Treasury bill rate on a monthly basis (TB) has been used as the benchmark for risk free returns in Malaysia (Breeden et al. 1989). Monthly data is utilized in this study as an annual data set would lead to problems of insufficient numbers of observations. This study also breaks up the period into three sub-samples for forecasting purposes which are based on economic conditions (Before, During and After the Financial crisis of 1997): (1) 1990-1996 (before financial crisis 1997); (2) 1997-1998 (during recession; (3) 1999-2007 (after the financial crisis 1997). The time range of economic conditions is based on the country's performance on the Kuala Lumpur Composite Index performance (KLCI). All the return series are transformed into logarithmic form.

Prior to the regression analysis, unit root tests were conducted using the Augmented Dicker Fuller (1979) (ADF test), Phillips Perron (1988) (PP test) and the Kwiatkowski, Phillips, Schmidt and Shin (1992) (KPSS test). The standard KPSS test failed to reject the null hypothesis and therefore using levels data is sufficient as the data is stationary. The results for the unit root tests are shown as in Table 1.

Table 1: Unit Root Tests Analysis using levels data

Variable/ Tests	**ADF**	**PP**	**KPSS**
Log Returns			
ADF test Statistic	(-6.0992)***	(-13.7068)***	N/A
Critical Values based on MacKinnon	-3.4321	-3.4318	N/A
KPSS test based on LM Statistic	N/A	N/A	0.1182
Asymptotic Critical values	N/A	N/A	(0.1460)
Log Equity Premium			
ADF test Statistic	(-5.6573)***	(-12.8810)***	N/A
Critical Values based on MacKinnon	-3.4321	-3.4318	N/A
KPSS test based on LM Statistic	N/A	N/A	0.1091
Asymptotic Critical values	N/A	N/A	(0.1460)
Log Dividend Price Ratio			
ADF test Statistic	(-3.4027)*	(-3.4403)**	N/A
Critical Values based on MacKinnon	-3.4321	-3.4318	N/A
KPSS test based on LM Statistic	N/A	N/A	0.1172
Asymptotic Critical values	N/A	N/A	(0.1460)
Log Dividend Yields			
ADF test Statistic	(-3.1259)	(-3.2232)*	N/A
Critical Values based on MacKinnon	-3.4321	-3.4318	N/A
KPSS test based on LM Statistic	N/A	N/A	0.0436
Asymptotic Critical values	N/A	N/A	(0.1460)

Figures in the parentheses are calculated values. * denotes significance at the 10% level, ** denotes significance at the 5% level and *** denotes significance at the 1% level. The critical value is based on 5% level. N/A denotes not applicable.

The Mincer- Zarnowitz (1969) regression is also adopted in this study to test of the relationships between the actual and forecasts of stock returns and the equity premium using the following equation:

$$E(Y) = E(\widehat{Y}) \quad (5)$$

$$Cov(Y, \hat{Y} - var(\widehat{Y})) = 1 \quad (6)$$

where the variable y is the variable to be predicted, and the estimate $\hat{Y}$ is a prediction of Y. The assumption in this regression is that when α = 0 and β = 1 these would be circumstances where the actual forecast is perfect. However, for the purposes of this study, the observed log stock returns and log equity premium are regressed on the forecast stock returns and equity premiums of the Bursa Malaysia (BM). The regression will help to determine whether the out of sample predictive performances involve positive errors (under prediction) or negative errors (over prediction). The next sub section presents the findings of the study. The Mincer-Zarnowitz (1969) is widely used in the study of symmetric and assymetric losses in stock markets, on macroeconomic issues and the foreign exchange markets as shown in Graham, Ivana and Timmermann (2005), Patton and Timmermann (2002) and Mishkin (1981).

4. Findings

The main purpose of this study is to investigate the ability of dividend price ratios and dividend yields to explain stock returns and the equity premium using time series forecasting regressions. Table 2 presents the descriptive statistic for the four important variables used in this paper. The findings are presented in three sub sections comprising: (a) descriptive statistics and Time series regression results, (b) the in sample and out sample performances (c) Mincer- Zarnowitz (1969) regression forecasting results and lastly (d) the comparison of findings between this study and those of Cochrane (2006).

4.1 Descriptive statistic and Time Series Regressions

Table 2 provides descriptive statistics for the four important variables used in this paper. The stock returns have a mean of 0.71% or 0.0071 for the overall period from 1990 to 2007; the minimum return is -23.24% and the maximum 31.94%, with a skewness coefficient of near to zero and a positive kurtosis coefficient of 2.444. The equity premium's mean is shown as -3.88% after obtaining it by deducting from the average stock returns the average risk free rate of approximately 4%. In contrast the dividend price ratios and dividend yields have mean values of 0.548% and 0.550% respectively.

Table 2: Descriptive Statistics (returns in logarithmic form)

Statistics/ Variables	Return (%)	Equity Premium (%)	Dividend Price Ratio (%)	Dividend Yields (%)
Mean	0.71	-3.88	0.548	0.550
Standard Deviation	7.17	7.51	0.26	0.27
Minimum	-23.24	-31.30	0.16	0.14
Maximum	31.94	26.02	2.02	2.26
Skewness	0.224	-0.035	1.63	1.74
Kurtosis	2.444	1.939	6.47	8.02

Number of Observations =216

Table 3 presents the results of the regression analysis of both stock returns and the equity premiums respectively using two independent variables; namely dividend price ratios and dividend yields. Significance tests are undertaken using Newey-West adjusted t-statistics. The general findings suggest that both stock returns and the equity premiums are significantly explained by the dividend yield which exhibits superiority over dividend price ratios. This finding is supported by Fama and French (1988). However, the overall R-squares show very poor explanatory power.

Table 3: Results of Regression of Stock Returns on Dividend Price Ratios (DPR) and Dividend Yields (DY) from January 1990 until December 2007
Dependent Variable: Log Stock Returns (R_t) and Log Equity Premium (EP_t) at time t.

Model	$LogR_t = \alpha + \beta LogDPR_{(t-1)} + \varepsilon_t$	$LogR_t = \alpha + \beta LogDY_{(t-1)} + \varepsilon_t$	$LogEP_t = \alpha + \beta LogDPR_{(t-1)} + \varepsilon_t$	$LogEP_t = \alpha + \beta LogDY_{(t-1)} + \varepsilon_t$
β	0.0228	0.0356	0.0205	0.0525
t-stat	2.3036	2.3797	1.8700	3.2047
p-value	(0.022)**	(0.018)**	(0.063)*	(0.002)***
α	0.1281	-0.0210	0.0689	-0.0812
t- Statistic	2.4243	-1.6546	1.1764	-5.8620
p-values of t-statistic	(0.016)**	(0.099)*	(0.241)	(0.0001)***
R- Squared	0.0243	0.0259	0.0162	0.0459
No. of observation	215	215	215	215

Notes: The Newey-West adjusted t- statistic is given in below the coefficients figures in the parentheses are the p-values. * denotes significance at the 10% level, ** denotes significance at the 5% level and *** denotes significance at the 1% level.

Thus, the results of the time series regressions show statistically significant explanatory ability which indicates both independent variables influence the dependent variables. Therefore, the authors run further regressions for in sample and out of sample performances.

4.2 In-sample and Out of sample Performance

The in Sample performance for stock returns showed poor performances for the all three different economic conditions as well as for the overall period. These results were consistent with Goyal and Welch (2003, 2006) and Cochrane (2006). These findings suggest that only the sub sample before the economic crisis shows log dividend price ratios as being significant at a 95% level in explaining log stock returns (see table 4). Furthermore, the forecast errors of log stock returns show an extreme gap in forecasting as illustrated in table 6. Using Diebold and Mariano (1995) the statistics (ranging from -1.2 to +1.0) indicate that none of the reported out of sample RMSE performers are statistically significantly different from one-another.

Table 4: Results of Regressions of Stock returns in Subsamples

Samples	α	B	R^2%	Adj R^2 %	s.e%	N
		Panel 1				
Log Dividend Price Ratios						
1990- 1996 (Before Crisis)	-0.042	0.099	6.41	5.25	7.69	84
	(-1.51)	(2.14)**				
1997- 1998 (During Crisis)	-0.106	0.056	2.67	-1.75	14.4	24
	(-1.54)	(0.80)				
1999-2007 (After Crisis)	-0.020	0.032	0.89	-0.04	5.41	108
	(-0.60)	(0.81)				
		Panel 2				
Log Dividend Yields						
1990-1996 (Before Crisis)	-0.035	0.081	4.10	2.92	7.79	84
	(-1.33)	(1.86)*				
1997-1998 (During Crisis)	-0.086	0.038	1.46	--3.02	14.6	24
	(-1.43)	(0.61)				
1999-2007 (After Crisis)	-0.014	0.025	0.67	-0.26	5.42	108
	(-0.47)	(0.713)				

Explanation: This table presents the results of the following univariate regression for different sample periods:

$$\mathbf{LogR_t = \alpha + \beta. LogX(t\text{-}1) + \varepsilon_t}$$

The Newey-West adjusted t- statistic is given in parenthesis below the coefficients. Data and frequency is monthly; s.e is the standard error of the regression residuals, and N is the Number of observation. figures in the parentheses are the p-values. * denotes significance at the 10% level, ** denotes significance at the 5% level and *** denotes significance at the 1% level.

Estimated coefficients vary widely across sub periods, casting some doubt on the stability of the specified model. Meanwhile, the findings for the log equity premiums are similar to those for log stock returns as shown in table 5. Based on Diebold and Mariano (1995) statistics the out of sample results for log stock returns and the log equity premium show poor forecast ability (see Table 6).

Table 5: Results of Regressions of Equity Premium in Subsamples

Sample	A	B	R^2%	Adj R^2 %	s.e%	N
		Panel 1				
Log Dividend Price Ratios						
1990- 1996 (Before Crisis)	-0.098	0.087	4.32	3.14	8.25	84
	(-3.43)	(1.78)				
1997-1998 (During Crisis)	-0.176	0.053	1.97	-2.49	16.1	24
	(-2.35)	(0.67)				
1999- 2007 (After crisis)	-0.043	0.024	0.48	-0.46	5.54	108
	(-1.26)	(0.597)				
		Panel 2				
Log Dividend Yields						
1990-1996 (Before Crisis)	-0.073	0.037	0.74	-0.48	8.41	84
	(-2.62)	(0.81)				
1997-1998 (During Crisis)	-0.155	0.034	0.93	-3.57	16.2	24
	(-2.37)	(0.48)				
1999-2007(After Crisis)	-0.037	0.017	0.32	-0.62	5.55	108
	(-1.24)	(0.49)				

Explanation: This table presents the results of the following univariate regression for different sample periods:

$$\mathbf{LogEP_t = \alpha + \beta. LogX(t\text{-}1) + \varepsilon_t}$$

The Newey-West adjusted t- statistic is given in parenthesis below the coefficients. Data and frequency is monthly; s.e is the standard error of the regression residuals, and N is the Number of observation. Figures in the parentheses are the p-values. * denotes significance at the 10% level, ** denotes significance at the 5% level and *** denotes significance at the 1% level.

Table 6: Out of Sample Performance: Stock returns and Equity Premium Forecast errors

Dependent Variable	Stock Returns		Equity Premium	
Independent Variable	Dividend price Ratios Model (DPR_{t-1})	Dividend Yields Model (DY_{t-1})	Dividend price Ratios Model (DPR_{t-1})	Dividend Yields Model (DY_{t-1})
Full Sample (1990-2007)				
Root Mean Squared Error	7.96	7.96	**8.81**	8.82
Mean Absolute error	**5.54**	5.55	**6.11**	6.17
Mincer-Zarnowitz Error*	**7.99**	7.80	**8.84**	8.85
First subsample (1990- 1996)				
Root Mean Squared Error	**8.11**	8.51	9.09	**8.88**
Mean Absolute error	6.33	**6.01**	**6.09**	6.14
Mincer-Zarnowitz Error*	**7.86**	7.81	**8.38**	8.43
Second Subsample (1997-1998)				
Root Mean Squared Error	10.46	**10.02**	12.77	**12.3**
Mean Absolute error	8.60	**8.12**	11.01	**10.4**
Mincer-Zarnowitz Error*	14.97	**14.44**	**16.00**	16.08
Third Subsample (1999-2007)				
Root Mean Squared Error	7.98	7.98	**9.03**	9.07
Mean Absolute error	**5.53**	5.54	**6.12**	6.17
Mincer-Zarnowitz Error*	**5.34**	5.36	5.54	**5.53**

Notes: The best relative performers are bold faced. Using Diebold and Mariano (1995) statistics (ranging -1.2 to +1.0) indicate that none of the reported out of sample RMSE performers are statistically significantly different from another.
*Mincer-Zarnowitz (1969) Regression forecast error

4.3 Mincer Zarnowitz (1969) forecasting Regression

Mincer-Zarnowits Regression results based on log stock returns and the log equity premium estimate using both log dividend price ratio and log dividend yields which are indicated in Panel 1 and Panel 2 respectively of tables 7 and 8. The results suggested that both regressions on log stock returns and log equity premium failed to produce good forecasting ability as the $\beta \neq 1$ which shows the actual forecast is not perfect and the R^2 are very low. Furthermore, the The Newey-West adjusted t- statistic is given in parenthesis below the coefficients (**β**) show insignificance at a 95% confidence level for three different economic situations as well as the overall period for both dependent variables of log stock returns and log equity premium.

Table 7: Results of Mincer-Zarnowitz Forecast Regressions for Log Stock returns on Subsamples and the Overall Market

Samples	**A**	**β**	**R^2%**	**Adj R^2%**	**S.E%**	**N**
		Panel 1				
Log Dividend Price Ratios (Model 1)						
1990-2007 (Overall Market)	-0.0044 (-0.225)	0.0086 (0.301)	0.09	-0.38	7.99	215
1990- 1996 (Before Crisis)	0.0051 (0.553)	0.5873 (1.5437)	2.34	1.13	7.86	83
1997- 1998 (During Crisis)	0.0256 (0.349)	1.5995 (1.3481)	7.01	2.59	14.40	23
1999-2007 (After Crisis)	-0.0037 (-0.437)	1.5273 (1.386)	2.09	1.16	5.37	107
		Panel 2				
Log Dividend Yields (Model 2)						
1990-2007 (Overall Market)	-0.001 (-0.051)	0.0041 (0.137)	0.02	-0.45	8.00	215
1990-1996 (Before Crisis)	0.0415 (2.622)**	0.8997 (2.068)**	3.35	2.16	7.82	83
1997-1998 (During Crisis)	0.0477 (0.518)	2.0943 (1.305)	6.40	1.94	14.44	23
1999-2007 (After Crisis)	-0.0043 (-0.437)	2.0130 (1.556)	2.54	1.62	5.36	107

Explanation: This table presents the results of the following Mincer-Zarnowitz (1969) regression for different sample periods:

$$E(Y) = E(\widehat{Y})$$

$$Cov(Y, \hat{Y}/var(\widehat{Y})) = 1$$

The Newey-West adjusted t- statistic is given in parenthesis below the coefficients. Data and frequency is monthly; s.e is the standard error of the regression residuals, and N is the Number of observation. Figures in the parentheses are the p-values. * denotes significance at the 10% level, ** denotes significance at the 5% level and *** denotes significance at the 1% level.

Table 8: Results of Mincer-Zarnowitz Regressions for Log Equity Premium on Subsamples and Overall Market

Sample	α	β	R^2%	Adj R^2 %	S.E%	N
		Panel 1				
Log Dividend Price Ratios (Model 3)						
1990-2007 (Overall Market)	-0.0736	0.0960	0.48	0.01	8.84	215
	(-1.799)*	(0.645)				
1990- 1996 (Before Crisis)	-0.0236	0.5432	1.37	0.16	8.38	83
	(-0.884)	(1.052)				
1997-1998 (During Crisis)	0.0982	1.8485	6.68	2.24	16.00	23
	(0.522)	(1.302)				
1999- 2007 (After crisis)	0.0181	1.7893	1.53	0.60	5.54	107
	(0.5109)	(1.192)				
		Panel 2				
Log Dividend Yields (Model 4)						
1990-2007 (Overall Market)	-0.0474	0.3783	0.17	-0.30	8.85	215
	(-6.72)***	(0.380)				
1990-1996 (Before Crisis)	-0.0425	0.1810	0.03	-1.21	8.44	83
	(-0.784)	(0.171)				
1997-1998 (During Crisis)	-0.0213	2.2058	5.72	1.23	16.08	23
	(-0.200)	(1.210)				
1999-2007(After Crisis)	0.0354	2.5112	1.89	0.95	5.53	107
	(0.814)	(1.355)				

Explanation: This table presents the results of the following univariate regression for different sample periods:

$$E(Y) = E(\widehat{Y})$$

$$Cov(Y, \hat{Y}/var(\widehat{Y})) = 1$$

The Newey-West adjusted t- statistic are given in parenthesis below the coefficients. Data and frequency is monthly; s.e is the standard error of the regression residuals, and N is the Number of observation. figures in the parentheses are the p-values. * denotes significance at the 10% level, ** denotes significance at the 5% level and *** denotes significance at the 1% level.

4.3 Findings of Cochrane (2006).

The regression model estimated in table 9 is taken from a study conducted by Cochrane (2006). Prior to this regression test, we also conducted regressions using both raw and data deflated by the CPI. The results shown are similar to Cochrane's findings (2006)[1]. Then, we deflated the data by changes in the consumer price index and found that the growth of dividends is predictable. As mentioned by Cochrane (2006) if stock returns and dividend

[1] Results are available upon request.

growth are not predictable then price growth must be forecastable to bring the dividend yields back to equilibrium after a shock given that the dividend yields are stationary.

Table 9: Results Based On Cochrane (2006) using Change of Inflation (CPI)

Regression	B	t-stat	R^2(%)	σ(βx)%
$R_{t+1} = \alpha + \beta\,(D_t/ P_t) + \varepsilon_{t+1}$	-4.1267	-0. 7696	0.277	23.73
$R_{t+1} - R_{ft} = \alpha + \beta\,(D_t/ P_t) + \varepsilon_{t+1}$	-4.5701	-0.8690	0.353	23.28
$D_{t+1}/D_t = \alpha + \beta\,(D_t/ P_t) + \varepsilon_{t+1}$	-13.4908	-2.7001**	3.309	22.46
$r_{t+1} = \alpha_r + \beta_r\,(d_t - p_t) + \varepsilon_{t+1}$	0.1253	0.45459	0.0097	19.79
$\Delta\, d_{t+1} = \alpha_d + \beta_d\,(d_t - p_t) + \varepsilon_{t+1}$	-0.03043	-0.71201	0.27	30.70

R_{t+1} is the real return, deflated by the CPI, D_{t+1}/D_t is real dividend growth and D_t/P_t is the dividend price ratio of KLCI market value weighted index. Rf_t is the real return on 3 months treasury bills. Small letters are logs . Monthly data was used from January 1990 until December 2007. σ(βx) gives the standard deviation of the fitted value of the regression. * denotes significance at the 10% level, ** denotes significance at the 5% level and *** denotes significance at the 1% level.

5. CONCLUSION

In conclusion, based upon the general results the evidence seems to support both the dividend price ratio and dividend yields as being predictor variables for stock returns and the equity premium as revealed in Fama and French (1988). However, the average return in the Malaysian stock market was reported to be very low compared to the 4%-7% as mentioned by Cochrane (2006) in many developed and developing countries. Using the Mincer Zarnowitz (1969) regression the forecasting results show poor performances for three different economic times as well as for the overall market. These results supported the forecasting findings using time series regressions with very poor out of sample forecasting results and large errors similar to Goyal and Welch (2003,2006) Cochrane (2006) and Ang and Bakaert (2001). Our findings vary in significance and are sensitive to the choice of the sample period, as supported by Valkanov (2003), Boudoukh et al. (2006).

REFERENCES

Ang, A., & Bakaert, G. (2001). Stock Return Predictability: Is it there? *National Bureau Economic Research* working paper 8207

Breeden, D.T., Gibbons,M.T., & Litzennberger, R.H. (1989), Empirical Tests of the ConsumptionOriented CAPM, *Journal of Finance,*44,231-262.

Boudoukh, J., Richardson, M., & Whitelaw, R. F. (2006). The Myth of Long Horizon Predictability. *National Bureau Economic Research,* Working paper 11841.

Campbell, J. Y. (2001). Why Long Horizon? A study of Power Again Persistent Alternatives. *Journal of Empirical Finance, 8*, 459-491.

Campbell, J. Y., & Shiller, R. J. (1998). Valuation Ratios and the Long Run Stock Market Outlook. *Journal of Portfolio Management*. 24, 11-26

Campbell, J. Y., & Viceira, L. M. (2002). Strategic Asset Allocation: Portfolio Choice for Long Term Investors (Oxford University Press, Oxford U.K).

Cochrane, J. H. (2006). The Dog That Did Not Bark: A Defence of Return Predictability. *National Bureau Economic Research* Working Paper 12026.

Dickey, D.A., & Fuller, W.A. (1979). Distribution of estimators for autoregressive time series with a unit root. *Journal of the American Statistical Association*, 74, 427-431.

Diebold, F.X., & Mariano, R.S. (1995). Comparing predictive accuracy, *Journal of Business Economic Statistic*. 13(3), 3-25

Fama, E. F., & French, K. R. (1988). Dividend yields and expected stock returns. *Journal of Financial Economics, 22*(1), 3-25.

Fama, E. F., & French, K. R. (1989). Business Conditions and Expected Returns on Stocks and Bonds. *Journal of Financial Economics, 22*(1), 3-25.

Goyal, A., & Welch, I. (2003). Predicting the Equity Premium with dividend Ratios. *Management Science, 49*, 639-654.

Goyal, A., & Welch, I. (2006). A comprehensive look at the empirical performance of equity premium. *Review Financial Studies*(Forthcoming).

Kwiatkowski, D., Phillips, P.C.B., Schmidt, P., and Shin Y. (1992), Testing the null hypothesis of stationary against the alternative of a unit root? *Journal of Econometrics,* 54, 159-178.

Mincer, J., & Zarnowitz, V. (1969). The Evaluation of Economic Forecast, in Mincer, J. (ed), Economic Forecast and Expectations, New York, NBER.

Mishkin, F.S., (1981). Are Markets Forecasts Rational? *American Economic Review 71*, 295-306

Patton, A., & Timmermann, A. (2002). Herd Behaviour and Investment. *American Economic Review 80*, 464-479

Paye, B. S., & Timmermann, A. (2006). Instability of Return Prediction Models. *Journal of Empirical Finance*. 13, 274-315.

Phillips, P.C.B., & Perron, P (1988), Testing for a unit root in time series regression.. *Biometrica,* 75(2), 335-346.

Valkanov, R., (2003). Long-horizon regressions: theoretical results and applications, *Journal of Financial Economic*s. 68, 201-232.